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NEWS	14	Jul 29	Enhanced polymer searching in REGISTRY
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NEWS	16	Aug 08	CANCERLIT reload
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NEWS	20	Aug 19	IFIPAT, IFICDB, and IFIUDB have been reloaded
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NEWS	22	Aug 26	Sequence searching in REGISTRY enhanced
NEWS	23	Sep 03	JAPIO has been reloaded and enhanced
NEWS	24	Sep 16	Experimental properties added to the REGISTRY file
NEWS	25	Sep 16	Indexing added to some pre-1967 records in CA/CAPLUS
NEWS	26	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS	27	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985
NEWS EXPRESS			October 14 CURRENT WINDOWS VERSION IS V6.01, CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP), AND CURRENT DISCOVER FILE IS DATED 01 OCTOBER 2002
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FILE COVERS 1907 - 16 Oct 2002 VOL 137 ISS 16

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=> s supercritical carbon dioxide

16526 SUPERCRITICAL

924964 CARBON

360375 DIOXIDE

L1 2620 SUPERCRITICAL CARBON DIOXIDE

(SUPERCritical(W) CARBON(W) DIOXIDE)

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=> s l1 and isolation

211836 ISOLATION

L2 27 L1 AND ISOLATION

=> s l1 and separation

158454 SEPARATION

L3 73 L1 AND SEPARATION

=> dup rem l2 and l3

'L3' IS NOT VALID HERE

=> dup rem l2 and l3

'L3' IS NOT VALID HERE

=>

=> dup rem l2 l3
PROCESSING COMPLETED FOR L2
PROCESSING COMPLETED FOR L3
L4 100 DUP REM L2 L3 (0 DUPLICATES REMOVED)

=> s l3 and vitamin D
149509 VITAMIN
1917772 D
20178 VITAMIN D
(VITAMIN(W)D)
L5 0 L3 AND VITAMIN D

=> s l2 and vitamin D
149509 VITAMIN
1917772 D
20178 VITAMIN D
(VITAMIN(W)D)
L6 0 L2 AND VITAMIN D

=> s l2 and vitamin D3
149509 VITAMIN
30699 D3
8670 VITAMIN D3
(VITAMIN(W)D3)
L7 0 L2 AND VITAMIN D3

=> s l2 and vitamin D2
149509 VITAMIN
48840 D2
2388 VITAMIN D2
(VITAMIN(W)D2)
L8 0 L2 AND VITAMIN D2

=> d l2 1-27 ibib hitstr abs

L2 ANSWER 1 OF 27 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:19791 CAPLUS
DOCUMENT NUMBER: 137:159100
TITLE: Pharmaceutical applications of **supercritical carbon dioxide**
AUTHOR(S): Kaiser, C. S.; Rompp, H.; Schmidt, P. C.
CORPORATE SOURCE: Department of Pharmaceutical Technology,
Eberhard-Karls-University, Tübingen, Germany
SOURCE: Pharmazie (2001), 56(12), 907-926
CODEN: PHARAT; ISSN: 0031-7144
PUBLISHER: Govi-Verlag Pharmazeutischer Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. The appearance of a supercrit. state was already obsd. at the beginning of the 19th century. Nevertheless, the industrial extn. of plant and other natural materials started about twenty years ago with the decaffeination of coffee. Today carbon dioxide is the most common gas for supercrit. fluid extn. in food and pharmaceutical industry. Since pure supercrit. carbon dioxide is a lipophilic solvent, mixts. with org. solvents, esp. alcs., are used to increase the polarity of the extn. fluid: more polar compds. can be extd. in this way. The main fields of interest are the extn. of vegetable oils from plant material in anal. and preparative scale, the prepn. of essential oils for food and cosmetic industry and the **isolation** of substances of pharmaceutical relevance. Progress in research was made by the precise measurement of phase equil. data by means of different methods. Apart from extn.

supercrit. fluid chromatog. was introduced in the field of analytics. as well as micro- and nanoparticle formation using supercrit. fluids as solvent or antisolvent. This review presents pharmaceutical relevant literature of the last twenty years with special emphasis on extn. of natural materials.

REFERENCE COUNT: 367 THERE ARE 367 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:762296 CAPLUS

DOCUMENT NUMBER: 134:155098

TITLE: Preparation of noble metal fine particles in water/
supercritical carbon dioxide
microemulsion

AUTHOR(S): Yonezawa, Yoshiro; Kometani, Noritsugu

CORPORATE SOURCE: Fac. Eng., Osaka City Univ., Japan

SOURCE: Chorinkai Saishin Gijutsu (2000), 4, 45-51

CODEN: CSGIF5

PUBLISHER: Jasuko Repotosha

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A review, with 37 refs., on the subject matter. Described herein are (1) synthesis of fine particles of silver and gold, and their optical properties, by referring to the results of researches on e.g., **isolation** of matrixes from metallic clusters and radiolysis of aq. solns. of metallic ions, and (2) new methods of fine metallic particles in water/supercrit. CO₂ microemulsion, form in the presence of ammonium carboxylate perfluoroether as the surfactant and used as the microreactor, where AgClO₄ and NaAuCl₄ are used as the stock materials.

L2 ANSWER 3 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:542839 CAPLUS

DOCUMENT NUMBER: 133:117174

TITLE: Processing method of extracting effective components from gettama leaf using **supercritical carbon dioxide**

INVENTOR(S): Zhou, Guixin

PATENT ASSIGNEE(S): Gute Gettama Development Co., Ltd., Zunyi, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
AB	CN 1241560	A	20000119	CN 1999-114969	19990625
	The process comprises crushing leaf of Eucommia Oliv., extg. with CO ₂ at 35-40.degree. and 15-25 MPa for 2 h to obtain chlorogenic acid, extg. at 45-50.degree. and 25-35 MPa for 2 h to obtain geniposidic acid, and extg. at 55-65.degree. and 40-50 MPa for 2.5 h to obtain caryophyllin diglycoside.				

L2 ANSWER 4 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:651943 CAPLUS

DOCUMENT NUMBER: 132:37741

TITLE: High temperature **supercritical carbon dioxide** extractions of geological samples: effects and contributions from the sample matrix

AUTHOR(S): Jaffe, R.; Diaz, D.; Furton, K. G.; Lafargue, E.
 CORPORATE SOURCE: Southeast Environmental Research Program, Florida
 International University, Miami, FL, 33199, USA
 SOURCE: Applied Geochemistry (1999), Volume Date 2000, 15(1),
 79-89
 CODEN: APPGEY; ISSN: 0883-2927
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Stepwise high-temp. supercrit. fluid extn. (HT-SFE) has been suggested as
 a tool to study the speciation of hydrocarbons in geol. samples.
 Hydrocarbons extd. at lower temps. (e.g., 50.degree.) are presumed to be
 part of the freely extractable fraction, whereas those recovered at the
 high temps. (e.g., 300 and 350.degree.) are those "trapped" within the
 macromol. org. matrix and are therefore, resistant to desorption. The
 latter are released from the matrix after this undergoes thermally induced
 structural rearrangements. However, the question still remains if and to
 what extend, pyrolysis of the org. matrix can contribute to this fraction.
 Based on the characteristics of the sample matrix of two different
 Posidonia and Kupferschiefer shale samples subject to HT-SFE, the
 pyrolytic contributions at elevated extn. temps. are only minor under the
 exptl. conditions used, and the thermally induced structural changes in
 the macromol. org. matrix are only partially irreversible.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:600147 CAPLUS
 DOCUMENT NUMBER: 131:292394
 TITLE: The effect of **supercritical carbon
 dioxide** treatment on the leachability and
 structure of cemented radioactive waste-forms

AUTHOR(S): Hartmann, T.; Paviet-Hartmann, P.; Rubin, J. B.;
 Fitzsimmons, M. R.; Sickafus, K. E.

CORPORATE SOURCE: Materials Science and Technology Division, Los Alamos
 National Laboratory, Structure Property Relations, Los
 Alamos, NM, 87545, USA

SOURCE: Waste Management (Oxford) (1999), 19(5), 355-361
 CODEN: WAMAE2; ISSN: 0956-053X

PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The former process for the cementation of transuranic (TRU) low-level
 wastes poses several tech. problems. Specifically in the US a TRU
 waste-form has not yet passed the Waste **Isolation** Pilot Plant
 prohibition for free liq. For this reason, treatment of the portland
 cement based waste-form with supercrit. CO₂ (SCCO₂) is shown to satisfy
 regulations. The effect of SCCO₂ treatment by applying different CO₂
 pressure and temp. conditions (8.4 MPa < p < 28 MPa, 35.degree. < T <
 62.degree.) on the leachability, phase constitution, and microstructure of
 surrogate-doped portland cement type I/II samples is presented. Leaching
 studies were performed using a synthetic groundwater leaching procedure.
 Changes in phase constitution of the major cryst. phases (Ca(OH)₂, CaCO₃)
 as well as the microstructure were measured by x-ray diffraction and SEM.
 SCCO₂ treatment at 8.4 MPa and 35.degree. can be shown as the most
 promising conditions to satisfy the requirements of the Department of
 Transportation (DOT) and to enhance the natural aging reaction of cement
 paste by carbonation, combined with the lowest release rates of the
 surrogates ²³²Th, and ¹⁵¹/153Eu.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:388693 CAPLUS
DOCUMENT NUMBER: 131:29476
TITLE: Recovery of bioactive sesquiterpene lactone from
Tanacetum parthenium by extraction with
supercritical carbon dioxide
AUTHOR(S): Kery, A.; Ronyai, E.; Simandi, B.; Lemberkovics, E.;
Keve, T.; Deak, A.; Kemeny, S.
CORPORATE SOURCE: Inst. Pharmacognosy, Semmelweis Univ. Medicine,
Budapest, H-1085, Hung.
SOURCE: Chromatographia (1999), 49(9/10), 503-508
CODEN: CHRGB7; ISSN: 0009-5893
PUBLISHER: Friedrich Vieweg & Sohn Verlagsgesellschaft mbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **isolation** of parthenolide-rich products from feverfew
(Tanacetum parthenium (L.) Sch.) with super-crit. carbon dioxide extn. has
been investigated. A 32 full-factorial design was used to map the effects
of pressure and temp. on the extn. yields and on the yield of
parthenolide. The compn. of the essential oil of feverfew obtained by
hydrodistn. was compared with that of the SFE ext. contg. the volatile
comps.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:223127 CAPLUS
DOCUMENT NUMBER: 131:86950
TITLE: Application of **supercritical carbon
dioxide** to the extraction of spice flavors
AUTHOR(S): Shiraishi, Satoru
CORPORATE SOURCE: Technology Research Center, Hasegawa Fragrance Co.,
Ltd., Japan
SOURCE: Koryo (1999), 201, 113-120
CODEN: KORYAR; ISSN: 0368-6558
PUBLISHER: Nippon Koryo Kyokai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB Supercrit. CO2 as a solvent is particularly useful for extn. of essential
oils from plant materials, compared to conventional methods such as steam
distn. and org. solvent extn. This review with 17 refs. refers to the
characteristics and principle of supercrit. CO2 extn. and its application
to the **isolation** of spice essential oils.

L2 ANSWER 8 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:598402 CAPLUS
DOCUMENT NUMBER: 125:226269
TITLE: Use of **supercritical carbon
dioxide** in coal processing
AUTHOR(S): Lanterman, H. Bryan; Lee, Sunggyu
CORPORATE SOURCE: Process Research Center, University Akron, Akron, OH,
44325-3906, USA
SOURCE: Proceedings - Annual International Pittsburgh Coal
Conference (1995), 12th, 738-743
CODEN: PICNE4; ISSN: 1075-7961
PUBLISHER: Pittsburgh Coal Conference, University of Pittsburgh
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Coal desulfurization for precombustion combustion was examd. using
supercrit. CO2-water and supercrit. CO2-MeOH at const. reduced temp. and
reduced pressure. Extn. efficiencies as well as the Btu heating values,
proximate and ultimate anal. of the extd. coal were provided. Although
supercrit. water was the best solvent in terms of sulfur extn., this
solvent alone resulted in reduced recovered heating value. Use of CO2,

however, either in conjunction with water or MeOH or alone, did not show any beneficial solvent effects; however, supercrit. CO2 has use as a secondary cleaning agent. Some typical org. sulfur compds. were identified in the liq. ext.

L2 ANSWER 9 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:495415 CAPLUS

DOCUMENT NUMBER: 125:140825

TITLE: A study on the extraction of cinnamon oil with **supercritical carbon dioxide**

AUTHOR(S): Chen, Kaixun; Yao, Ruiqing; Yang, Jichu; Zhu, Xu'en

CORPORATE SOURCE: Department of Chemical Engineering, Northwest University, Xi'an, 710069, Peop. Rep. China

SOURCE: Xibei Daxue Xuebao, Ziran Kexueban (1996), 26(2), 137-140

CODEN: HPHPAQ; ISSN: 1000-274X

PUBLISHER: Xibei Daxue Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A technol. for **isolation** of cinnamon oil with carbon dioxide as a solvent is described. The principle of the technique using supercrit. CO2 fluid as a solvent is to change the soly. of the solute in liq. CO2 at the crit. point of CO2. The exptl. result shows that in case of careful selection of proper conditions, the content of cinnamic aldehyde in cinnamon oil is more than 80%.

L2 ANSWER 10 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:389806 CAPLUS

DOCUMENT NUMBER: 125:53655

TITLE: A comparison between the oil and **supercritical carbon dioxide** extract of Hungarian wild thyme (Thymus serpyllum L.)

AUTHOR(S): Oszagyan, M.; Simandi, B.; Sawinsky, J.; Kery, A.

CORPORATE SOURCE: Department of Chemical Engineering, Technical University of Budapest, Budapest, H-1521, Hung.

SOURCE: Journal of Essential Oil Research (1996), 8(3), 333-335

CODEN: JEOREG; ISSN: 1041-2905

PUBLISHER: Allured

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two samples of wild thyme (T. serpyllum), which were collected from different locations in Hungary, were subjected to CO2 extn. and oil **isolation** by hydrodistn. Using GC and GC/MS as the method of anal. their compns. were compared. Anal. revealed that the oils and exts. contained the same components although they differed quant. The concn. of p-cymene, borneol, nerol and carvacrol was higher in the distd. oil than in the volatile conc. obtained by SFE.

L2 ANSWER 11 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:219681 CAPLUS

TITLE: Extraction and gas chromatographic yield analysis of squalene and stigmastrol from lemnae seu spirodelae herba using **supercritical carbon dioxide**.

AUTHOR(S): Choi, Young Hae; Kim, Jinwoong; Noh, Min Jeong; Park, Eun Mi; Choi, Eun Sun; Yoo, Ki-Pung

CORPORATE SOURCE: College Pharmacy, Seoul National University, Seoul, S. Korea

SOURCE: Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March 24-28 (1996), I&EC-164. American Chemical Society: Washington, D. C.

CODEN: 62PIAJ

DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB Utilizing two different types of equil. cell, column and gas chromatogs., the existence of viable amts. of phytochem. substances are newly identified from Lemnae Spirodela herba by supercrit. CO2 extn. We also carried out Soxhlet extn. by liq. solvents. Esp., we could isolate significant amts. of squalene and stigmasterol by supercrit. extn. compared to the conventional Soxhlet liq. extn. Over a wide range of supercrit. equil. conditions (308.15-333.15 K and 10-30 MPa), the selectivities and yields of **isolation** are detd. for both squalene and stigmasterol. We also discuss the advantage and shortcomings of supercrit. CO2 and liq. solvents in extg. phytochems. from natural plants with emphasis on yield and selectivity.

L2 ANSWER 12 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:639268 CAPLUS
DOCUMENT NUMBER: 123:142237
TITLE: Pilot-laboratory scale **supercritical carbon dioxide** extraction used for the **isolation** of seed oils

AUTHOR(S): Cocero, Maria Jose; Calvo, Lourdes
CORPORATE SOURCE: Dep. Ing. Quim., Univ. Valladolid, Spain
SOURCE: Alimentacion, Equipos y Tecnologia (1995), 14(3), 67-72
CODEN: AEQTDY; ISSN: 0212-1689
PUBLISHER: Editorial Alcion, S.A.
DOCUMENT TYPE: Journal
LANGUAGE: Spanish

AB An overview is given of the use of supercrit. fluid extn. with CO2 in the food industry and related areas. The complexity and cost restricts its utilization to operations where the added value of the product justifies the extra expense or where there is no other alternative method available. The construction of a pilot/lab.-scale facility for supercrit. fluid extn. is discussed and representative results from sunflower oil extn. are shown.

L2 ANSWER 13 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:297955 CAPLUS
DOCUMENT NUMBER: 122:64083
TITLE: Extraction of Bioactive Sesquiterpene Lactones from Magnolia grandiflora Using **Supercritical Carbon Dioxide** and Near-Critical Propane

AUTHOR(S): Castaneda-Acosta, Jose; Cain, Andrew W.; Fischer, Nikolaus H.; Knopf, F. Carl
CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA
SOURCE: Journal of Agricultural and Food Chemistry (1995), 43(1), 63-8
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The bioactive sesquiterpene lactones parthenolide and costunolide, as well as the tricyclic sesquiterpene cyclocolorenone, were extd. from the leaves of M. grandiflora. Parthenolide, costunolide, and cyclocolorenone in the exts. were identified by 1H NMR and quantified by HPLC. Results indicate that supercrit. carbon dioxide selectively removed parthenolide, costunolide, and cyclocolorenone when compared to std. liq. dichloromethane or near-crit. propane extn. HPLC traces show that the carbon dioxide ext. is virtually clean of any chlorophyll or fatty material peaks which hinder **isolation** of these chems.

L2 ANSWER 14 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:551134 CAPLUS

DOCUMENT NUMBER: 121:151134

TITLE: **Isolation** of natural insecticidal compounds from essential oils by using sub- and **supercritical carbon dioxide**

AUTHOR(S): Naik, S.N.; Kumar, Ashok; Maheshwari, R.C.

CORPORATE SOURCE: Cent. Rural Dev. Technol., Indian Inst. Technol., New Delhi, 110016, India

SOURCE: Indian Perfumer (1993), 37(4), 364-72

CODEN: IPERAS; ISSN: 0019-607X

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 45 refs. .beta.-Asarone, eugenol, thymol, 1,8-cineole, coumarins, etc., are discussed and their **isolation** method by using subcrit. and supercrit. CO₂ is described.

L2 ANSWER 15 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:330785 CAPLUS

DOCUMENT NUMBER: 120:330785

TITLE: **Isolation** of peppermint oil using **supercritical carbon dioxide** extraction

AUTHOR(S): Reverchon, E.; Ambruosi, A.; Senatore, F.

CORPORATE SOURCE: Dip. Ing. Chim. Aliment., Univ. Salerno, Fisciano, I-84084, Italy

SOURCE: Flavour and Fragrance Journal (1994), 9(1), 19-23

CODEN: FFJOED; ISSN: 0882-5734

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Peppermint leaf oil was isolated by a supercrit. fluid extn. (SFE) using CO₂ in which the extn. was followed by a 2-stage fractional sepn. Chem. anal. revealed that oils extd. under different SFE conditions possessed a widely different percentage compn. The percentage of co-extd. cuticular waxes varied too. Oil obtained by steam distn. was also compared with the extd. oils. Although practically the same compds. were present in the steam distd. oil, its compn. was similar to SFE oil extd. under non-optimized conditions. Qual. aroma tests showed that the oil obtained at optimum SFE conditions had a fragrance that better resembled that of the peppermint leaves used for the extn. of the oils.

L2 ANSWER 16 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:3760 CAPLUS

DOCUMENT NUMBER: 120:3760

TITLE: Selective extraction of phenolic components from Ginkgo biloba extracts using **supercritical carbon dioxide** and off-line capillary gas chromatography/mass spectrometry

AUTHOR(S): Verotta, Luisella; Peterlongo, Federico

CORPORATE SOURCE: Dip. Chim. Org. Ind., Milan, 20133, Italy

SOURCE: Phytochemical Analysis (1993), 4(4), 178-82

CODEN: PHANEL; ISSN: 0958-0344

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method has been developed for the extn. and anal. of phenolic components from crude exts. of G. biloba by supercrit. fluid extn. with carbon dioxide combined with off-line capillary gas chromatog./mass spectrometry. Class-selective extn. has been performed with a single supercrit. fluid by varying the extn. conditions. This method is applicable to the scale-up, **isolation** and identification of toxic phenolic components in com. exts. of G. biloba.

L2 ANSWER 17 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:648428 CAPLUS
DOCUMENT NUMBER: 119:248428
TITLE: **Isolation** and identification of volatiles
and condensable material in raw beef with
supercritical carbon dioxide
extraction
AUTHOR(S): King, Mei Fong; Hamilton, Barry L.; Matthews, Michael
A.; Rule, Daniel C.; Field, Ray A.
CORPORATE SOURCE: Dep. Chem. Eng., Univ. Wyoming, Laramie, WY, 82071,
USA
SOURCE: Journal of Agricultural and Food Chemistry (1993),
41(11), 1974-81
CODEN: JAFCAU; ISSN: 0021-8561
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Supercrit. CO2 extn. of raw beef produced two kinds of samples: a
noncondensable volatile fraction that was concd. from the CO2 on an
adsorbent (Tenax TA) and a condensed lipid fraction. The lipid fraction
was heated subsequent to CO2 extn. to produce addnl. volatiles. The
noncondensable fraction produced beef-like aroma. The compds. in this
fraction were desorbed from the Tenax directly into a GC/FID or GC/mass
spectrometer. Lipid fractions were analyzed by direct headspace sampling,
also using GC and GC/mass spectrometry. Eighty-six compds. were
identified in noncondensable fractions and 59 compds. in lipid headspace
samples. Twenty-six compds. were common to both fractions.

L2 ANSWER 18 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:87361 CAPLUS
DOCUMENT NUMBER: 118:87361
TITLE: **Isolation** of rosemary oil: comparison
between hydrodistillation and **supercritical**
carbon dioxide extraction
AUTHOR(S): Reverchon, E.; Senatore, F.
CORPORATE SOURCE: Dip. Ing. Chim. Aliment., Univ. Salerno, Fisciano,
I-84081, Italy
SOURCE: Flavour and Fragrance Journal (1992), 7(4), 227-30
CODEN: FFJOED; ISSN: 0882-5734
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rosemary leaf oil was isolated by a supercrit. fluid extn. (SFE) procedure
coupled to a fractional sepn. following the extn. stage. The oil produced
was compared with rosemary oil isolated by hydrodistn. Chem. anal.
revealed that, although roughly the same compds. were extd., the two oils
possessed a widely different percentage compn. Qual. aroma testing showed
that the oil obtained by SFE using CO2 showed a fragrance that better
resembled that of the rosemary leaves used for the **isolation** of
the oil.

L2 ANSWER 19 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:45732 CAPLUS
DOCUMENT NUMBER: 118:45732
TITLE: Extraction of magnolol from plants with
supercritical carbon dioxide
INVENTOR(S): Tada, Masayuki
PATENT ASSIGNEE(S): Jumoku Chushatsu Seibun Riyo Gijutsu Kenkyu Kumiai,
Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 04264035	A2	19920918	JP 1991-150805	19910215
AB	Magnolol (I), useful as a central nervous system depressant, anticaries agent, and food preservative, is extd. from I-contg. plants (e.g. Magnolia) by dissolving I in supercrit. CO2 and isolation of I from CO2 by varying the pressure and/or temp. of the CO2. I was extd. from plants with 80-90% recovery.				

L2 ANSWER 20 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:150460 CAPLUS

DOCUMENT NUMBER: 116:150460

TITLE: Liquid or **supercritical carbon dioxide** for preparation of odorless Porphyra

INVENTOR(S): Oosumi, Yukihiro; Yoshida, Reiko; Imamura, Hitoshi

PATENT ASSIGNEE(S): Shiroko K. K., Japan; Nippon Sanso K. K.

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 03285658	A2	19911216	JP 1990-84424	19900330
AB	The odorless Porphyra(Nori) is prepd. by the treatment of laver with liq. or supercrit. CO2. The odorless laver retains most of the color and taste of the Porphyra and is useful for isolation of physiol. active substances such as taurine and .gamma.-amino-butyric acid.				

L2 ANSWER 21 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:150259 CAPLUS

DOCUMENT NUMBER: 116:150259

TITLE: **Supercritical carbon dioxide** extraction of 2,4-dichlorophenol from food crop tissues

AUTHOR(S): Thomson, Cynthia A.; Chesney, David J.

CORPORATE SOURCE: Dep. Chem., Michigan Technol. Univ., Houghton, MI, 49931, USA

SOURCE: Analytical Chemistry (1992), 64(8), 848-53
CODEN: ANCHAM; ISSN: 0003-2700

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Supercrit. fluid extn. with CO2 was effective for the **isolation** of residue levels (0.1-1 ppm) of 2,4-dichlorophenol (I) from selected plant tissues. The I residues were incompletely extd. with supercrit. CO2 alone, since a substantial fraction of the I was covalently attached to the plant matrix. An acid pretreatment procedure was developed to partially hydrolyze the plant tissue prior to extn., releasing the bound residues. Steam distn. gave higher residue levels for field-treated straw samples. This is attributed to the greater degree of hydrolysis inherent in the steam distn. procedure. Supercrit. CO2 extn. of field-treated seed samples gave higher levels of I residues than did steam distn. The supercrit. fluid extractant was able to solvate I residues in the interior of the seed and transport them to the surface for collection. The aq. medium used in steam distn. was unable to penetrate the hydrophobic seed matrix to the same degree. Although the actual extn. time for supercrit. fluid extn. was far less than that of steam distn. (45 min vs. 5 h), the total sample prepn. time was similar in both methods. I was detd. by HPLC with amperometric detection.

L2 ANSWER 22 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:520600 CAPLUS
DOCUMENT NUMBER: 113:120600
TITLE: Extraction of the volatile oil of chamomile flowerheads using **supercritical carbon dioxide**
AUTHOR(S): Vuorela, H.; Holm, Y.; Hiltunen, R.; Harvala, T.; Laitinen, A.
CORPORATE SOURCE: Sch. Pharm., Univ. Helsinki, Helsinki, SF-00170, Finland
SOURCE: Flavour and Fragrance Journal (1990), 5(2), 81-4
CODEN: FFJOED; ISSN: 0882-5734
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The possibilities of enriching the most volatile chamomile (Chamomilla recutita) compds. in exts. by supercrit. CO2 extn. were studied by headspace gas chromatog. combined with mass spectrometry. Extn. with supercrit. CO2 is a convenient method for isolating volatile oils. Also the most volatile components of essential oils, that are normally lost during **isolation**, can be enriched in an ext. obtained by supercrit. CO2 extn.

L2 ANSWER 23 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:180739 CAPLUS
DOCUMENT NUMBER: 112:180739
TITLE: Purification and **isolation** of polyol-polyurethanes by extraction with **supercritical carbon dioxide**
INVENTOR(S): Robin, Jean; Blind, Andre
PATENT ASSIGNEE(S): Rhone-Poulenc Chimie, Fr.
SOURCE: Fr. Demande, 11 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2629086	A1	19890929	FR 1988-4051	19880322
FR 2629086	B1	19901207		
EP 337898	A1	19891018	EP 1989-420097	19890317
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 02004757	A2	19900109	JP 1989-66485	19890320
US 4871460	A	19891003	US 1989-327033	19890322
PRIORITY APPLN. INFO.:			FR 1988-4051	19880322

AB Method for purifn. and sepn. of condensates of isocyanates having free NCO groups (obtained from aliph., cycloaliph., or arylaliph. di- or polyisocyanates whose NCO groups are not attached to the arom. rings) comprises treating the condensates with a liq. or supercrit. inert gas. The condensates are useful for foams, elastomers, adhesives, coatings, or varnishes. Thus, a prepolymer contg. 3.5% free HDI, obtained by the reaction of OH-terminated poly(ethylene adipate) with HMI, was extd. with CO2 at 80.degree. and 14 MPa for 2 h to give a purified prepolymer with 0.05% HDI.

L2 ANSWER 24 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:32968 CAPLUS
DOCUMENT NUMBER: 112:32968
TITLE: Extraction of eicosapentaenoic acid and tocosahexaenoic acid from fish oil with **supercritical carbon dioxide**
INVENTOR(S): Kubota, Masayoshi; Matsuzaki, Harumi; Takahashi, Sankichi

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan; Hitachi Cable, Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01169354	A2	19890704	JP 1987-327027	19871225

AB During extn. of fish oil (esters) with supercrit. CO2 and subsequent gas chromatog. for the sepn. of eicosapentaenoic acid and docosahexaenoic acid, the chromatographed fractions are sepd. with separatory tanks contg. antioxidants (i.e. vitamin E) and distributed into containers filled with inert gases (e.g. CO2). The sepd. fractions are stable.

L2 ANSWER 25 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:607527 CAPLUS

DOCUMENT NUMBER: 109:207527

TITLE: **Isolation** of spices, peroxidase and other useful components from cruciferous plants with **supercritical carbon dioxide**

INVENTOR(S): Kobayashi, Takeshi; Taniguchi, Masayuki

PATENT ASSIGNEE(S): Kinjirushi Wasabi K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63087977	A2	19880419	JP 1986-233751	19861001
JP 2534043	B2	19960911		

AB **Isolation** of spices (I), peroxidase (II), etc., from cruciferous plants by extn. with supercrit. or liq. CO2 is described. Horseradish (100 kg, water content, 70%) was homogenated, extd. with supercrit. CO2 at 40.degree. and 200 atm. and the pressure was reduced to release CO2 to obtain 0.3 kg allyl isocyanate. The residue was mixed with H2O, treated with EtOH-CHCl3 (2:1) for pptn., and the supernatant was treated with 250 g (NH4)2SO4/L for pptn. The ppt. was dissolved, treated with EtOH, subjected to 56-70% satd. (NH4)2SO4 fractionation, and crystd. to give preoxidase.

L2 ANSWER 26 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:169565 CAPLUS

DOCUMENT NUMBER: 108:169565

TITLE: A **supercritical carbon dioxide** extraction from mixtures of triglycerides and higher fatty acid methyl esters using a gas-effusion-type system

AUTHOR(S): Ikushima, Yutaka; Hatakeda, Kiyotaka; Ito, Shota;

Saito, Norio; Asano, Takashi; Goto, Tomio

CORPORATE SOURCE: Gov. Ind. Res. Inst., Sendai, 983, Japan

SOURCE: Ind. Eng. Chem. Res. (1988), 27(5), 818-23

CODEN: IECRED; ISSN: 0888-5885

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Supercrit. CO2 extn. was performed to selectively sep. and conc. specific components in high purity and a large soly. from mixts. of triglycerides and higher fatty acid Me esters by using a gas-effusion-type app. The

addn. of EtOAc as an entrainer to the CO2 produced a supercrit. fluid that had high efficiencies for both the extn. of triolein (I) and the sepn. of I from its mixts. with tristearin. The use of the sepn. chamber, which was packed with stainless steel Rasching rings, made possible the selective extn. of Me oleate (II) from a mixt. of Me stearate (III), II, Me linoleate, and Me linolenate (IV). Furthermore, the **isolation** of III and IV from the mixt. became feasible by means of both a tube of AgNO3 supported on silica gel and EtOAc.

L2 ANSWER 27 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1984:453613 CAPLUS

DOCUMENT NUMBER: 101:53613

TITLE: Extraction of seed oils with **supercritical carbon dioxide**: effect on residual proteins

AUTHOR(S): Stahl, Egon; Quirin, Karl W.; Blagrove, Robert J.

CORPORATE SOURCE: Dep. Pharmacog. Anal. Phytochem., Univ. Saarland, Saarbruecken, D-6600, Fed. Rep. Ger.

SOURCE: J. Agric. Food Chem. (1984), 32(4), 938-40

CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Vegetable oils can be extd. from seed meals with supercrit. CO2 at relatively low temps. without the need to remove traces of solvent by heating. Despite the inert nature of CO2, its possible interaction with the proteins of the residual meal must be investigated. The **isolation** and characterization by gel electrophoresis of proteins from various seed meals of com. interest exposed to supercrit. CO2 are described. No significant difference, compared with meals extd. with hexane, was obsd. by amino acid anal. The major protein subunits were not cross-linked, whereas the degrdn. by trypsin of extd. lupine seed globulins was not enhanced by treatment with CO2, indicating minimal denaturation.

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274413 CHROMATOGRAPHY

L9 86 L1 AND CHROMATOGRAPHY

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384300 SILICA

408747 GEL

77208 SILICA GEL

(SILICA(W)GEL)

L10 10 L9 AND SILICA GEL

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L10 ANSWER 1 OF 10 ✓ CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:454408 CAPLUS

DOCUMENT NUMBER: 129:144386

TITLE: Chromatographic analysis of limonene and linalool on **silica gel in supercritical carbon dioxide**

AUTHOR(S): Sato, Masaki; Goto, Motonobu; Kodama, Akio; Hirose, Tsutomu

CORPORATE SOURCE: Department of Applied Chemistry and Biochemistry, Kumamoto University, Kumamoto, 860, Japan

SOURCE: Separation Science and Technology (1998), 33(9), 1283-1301

CODEN: SSTEDS; ISSN: 0149-6395

PUBLISHER: Marcel Dekker, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Adsorption behavior of limonene and linalool, which are resp. the principal constituents of terpene and oxygenated compds. in citrus oil, on **silica gel** in the presence of supercrit. carbon dioxide was analyzed by the tracer response method. A two-column system was used to eliminate the effect of nonideal behavior at the sample injection. Adsorption equil. and mass transport properties were evaluated by the moment method at pressure of 8.8-23.5 MPa and temps. of 313-333 K. The adsorption equil. const. was larger for higher temp. and lower pressure when linalool was selectively adsorbed on **silica gel**. The apparent heat of adsorption ranged from -20 to 230 kJ/mol. The Peclet no. and the ratio of intraparticle effective diffusivity to mol. diffusivity were 0.013-0.257 and 0.002-0.716, resp.

L10 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:417090 CAPLUS

DOCUMENT NUMBER: 129:221596

TITLE: Adsorption characteristics on organic solvents diluted in **supercritical carbon dioxide** measured by **chromatography** and IR spectroscopy

AUTHOR(S): Jin, Do-Won; Kim, Young-Il; Park, Dong-Won

CORPORATE SOURCE: Division of Chem. Eng. Dept. of Chem. Sci. and Eng., Grad. School of Eng. Sci., Osaka Univ., Osaka, 560, Japan

SOURCE: Kongop Hwahak (1998), 9(1), 76-81

CODEN: KOHWE9; ISSN: 1225-0112

PUBLISHER: Korean Society of Industrial and Engineering Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: Korean

AB Phys. adsorption on a **silica gel** (pore size of 80 nm, particle size of 10 .mu.m) has been studied for binary mixt. of acetone dild. in CO2 by use of a FTIR transmission technique and we have compared the result of FTIR transmission technique with that of a chromatog. technique. Measurements were made at 313.2 K and under pressures up to 15 MPa. As the pressure increases from 0.1 MPa, the IA (Integral Absorbance) of the hydrogen-bonded OH groups interacting with acetone and adsorbed amt. by use of a chromatog. technique increases at first, and reaches a max. at a pressure below the crit. pressure of CO2, and then the intensities decrease gradually with increasing pressure. It is found that the pressure below the crit. pressure of CO2, and then the pressure dependency of the chromatog. isotherm is a little larger than that of spectroscopic isotherm in the supercrit. fluid region. This difference might be attributable to the weaker van der Waals force and relatively stronger hydrogen-bonding force influencing the absorption of acetone on the **silica gel**. The unique spectroscopic characteristics of amine group which vibrational frequencies of hydroxyl groups on the **silica gel** surface shift downward to about 1300 cm-1 were measured from exptl. result of triethylamine dild. in CO2 or N2.

L10 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:783082 CAPLUS

DOCUMENT NUMBER: 128:159344

TITLE: A Study on the Adsorption Characteristics of Acetone and Benzene in **Supercritical Carbon Dioxide** Measured by **Chromatography** and IR Spectroscopy

AUTHOR(S): Jin, Do Won; Nitta, Tomoshige; Park, Dong-Won

CORPORATE SOURCE: Osaka University, Toyonaka, Osaka, 560, Japan

SOURCE: Bulletin of the Chemical Society of Japan (1997), 70(12), 2987-2993
CODEN: BCSJA8; ISSN: 0009-2673

PUBLISHER: Chemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Chromatog. and FTIR techniques were applied to a study of the absorption characteristics of acetone and benzene on a **silica gel** (SG800) in supercrit. CO₂ at 313.2 and 333.2 K. The chromatog. isotherms for acetone and benzene have a max. at a pressure lower than the crit. pressure of CO₂, and then decrease with increasing pressure. When the temp. increases, the adsorption isotherms decrease in the low-pressure region, and increase in the high-pressure region, providing a crossover at a relatively high pressure. The elution curves of acetone showed tailing, even at high pressures, while those of benzene showed quasi-Gaussian curves at high pressures. The tailing curves for acetone indicate the existence of heterogeneous sites; evidence of hydrogen-bonding formation with surface silanol groups has been provided by IR spectroscopy.

L10 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:706815 CAPLUS

DOCUMENT NUMBER: 127:348130

TITLE: Comparison of adsorption isotherms of acetone in **supercritical carbon dioxide** by **chromatography** and IR spectroscopy

AUTHOR(S): Jin, Do Won; Nitta, Tomoshige

CORPORATE SOURCE: Department of Chemical Engineering, Faculty of Engineering Science, Osaka University, Toyonaka, 560, Japan

SOURCE: Journal of Chemical Engineering of Japan (1997), 30(5), 948-951

CODEN: JCEJAQ; ISSN: 0021-9592

PUBLISHER: Society of Chemical Engineers, Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Phys. adsorption of acetone on a **silica gel** in supercrit. CO₂ was measured at 313.2 K and pressure up to 15.0 MPa by using a chromatog. technique. The exptl. adsorption isotherms qual. resemble the integral absorbance of hydrogen-bonded OH bands detd. previously by use of an FTIR technique. In the supercrit. fluid region, the chromatog. adsorption isotherms decrease more than IR spectroscopic isotherms, which is attributed to the weak van der Waals interactions that did not contribute to the hydrogen-bonded OH bands.

L10 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:220844 CAPLUS

DOCUMENT NUMBER: 120:220844

TITLE: Refining of oils using **supercritical carbon dioxide**

INVENTOR(S): Nakamura, Takeshi; Aoi, Nobuyuki

PATENT ASSIGNEE(S): Taiyo Kagaku Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 05345898	A2	19931227	JP 1992-235094	19920615
AB	The process using no aliph. hydrocarbons comprises dissolving raw material oil in liquefied CO ₂ and passing the liq. under supercrit. conditions through a packed column. Placing 10 g crude Macadamia nut oil (APHA color 100) in a column packed with 10 g silica gel and passing liquefied CO ₂ through the column at 50 atm gave a liq., which				

after CO2 evapn. yielded 8.9 g oil with APHA color 5 and no malodor.

L10 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:551063 CAPLUS

DOCUMENT NUMBER: 113:151063

TITLE: Enrichment of eicosapentaenoic acid and docosahexaenoic acid esters from esterified fish oil by programmed extraction-elution with **supercritical carbon dioxide**

AUTHOR(S): Higashidate, Sakae; Yamauchi, Yoshio; Saito, Muneo

CORPORATE SOURCE: Japan Spectrosc. Co., Ltd., Hachioji, 192, Japan

SOURCE: Journal of Chromatography (1990), 515, 295-303

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Me esters of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in esterified fish oil were extd. by supercrit. fluid extn. with carbon dioxide and directly introduced into a **silica gel** column coated with silver nitrate. Supercrit. fluid chromatog. with carbon dioxide was then performed by changing stepwise the pressure of the column outlet. The EPA and DHA Me esters thus sepd. were fractionated by reducing the pressure of column effluent to atm. In this way, EPA and DHA Me esters were enriched from 12% to 93% and from 13% to 82%, resp.

L10 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:240993 CAPLUS

DOCUMENT NUMBER: 112:240993

TITLE: Effects of temperature, pressure, and density on the chromatographic behavior of **supercritical carbon dioxide**

AUTHOR(S): Huetz, Andre; Schmitz, Franz Peter; Leyendecker,

Dietger; Klesper, Ernst

CORPORATE SOURCE: RWTH Aachen, Aachen, D-5100, Fed. Rep. Ger.

SOURCE: J. Supercrit. Fluids (1990), 3(1), 1-7

CODEN: JSFLEH; ISSN: 0896-8446

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of the phys. factors (temp., pressure, d., free vol.) on th chromatog. parameters (capacity ratio, selectivity, resoln.) are investigated for supercrit. fluid chromatog. by using CO2 as the mobile phase, unbonded **silica gel** as the stationary phase in a packed column, and a mixt. of polycyclic arom. hydrocarbons as the analyte. The results are presented as 3-dimensional graphs where color is used to exhibit a fourth variable. Two of the axes in the plots represent the phys. parameters, whereas the 3rd axis and the color represent chromatog. parameters. By selecting temp. as one of the variables and pressure or d. or free vol. as the other (which together fully characterize the state of the mobile phase), the dependence of 2 chromatog. parameters on these variables can be shown and the interrelation between these chromatog. parameters can be illustrated. The interrelations between the chromatog. parameters and the dependence on the phys. parameters being more varied in supercrit. fluid chromatog. than in gas and liq. chromatog., such multidimensional graphs are of particular value in providing an overview.

L10 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:240973 CAPLUS

DOCUMENT NUMBER: 112:240973

TITLE: Comparison of **supercritical carbon dioxide** and supercritical propane as mobile phases in supercritical fluid **chromatography**

AUTHOR(S): Lochmuller, C. H.; Mink, L. P.

CORPORATE SOURCE: Dep. Chem., Duke Univ., Durham, NC, 27706, USA

SOURCE: J. Chromatogr. (1990), 505(1), 119-37
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Comparisons of supercrit. propane and supercrit. CO₂ eluents were made on bare silica and octadecylsilane-derivatized silica by using substituted and unsubstituted arom. hydrocarbons as test solutes. The greater elution strength of CO₂ relative to propane for these solutes on underivatized silica is indicated to be largely the result of more effective competitive adsorption by CO₂ rather than enhanced mobile phase solv. The effects of the addn. of MeOH modifier on solute retention were more pronounced in propane for both polar and non-polar solutes. An increase in the retention of polar aroms. on silica was obsd. with increasing d. in MeOH modified propane. This is apparently the result of a concomitant increase in the availability of stationary phase adsorption sites.

L10 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:105380 CAPLUS
DOCUMENT NUMBER: 112:105380
TITLE: Adsorption isotherms on silica for methanol and 1-hexanol modifiers from **supercritical carbon dioxide**
AUTHOR(S): Lochmuller, C. H.; Mink, L. P.
CORPORATE SOURCE: Dep. Chem., Duke Univ., Durham, NC, 27706, USA
SOURCE: J. Chromatogr. (1989), 471, 357-66
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Adsorption isotherms were detd. for MeOH and 1-hexanol on silica from supercrit. CO₂ at 4 temps. and 3 mobile phase densities. Max. stationary phase concns. were extrapolated from linear least squares fits of the data to the Langmuir equation for monolayer adsorption. From these results, max. surface area coverages were calcd. by using the mean mol. area of each modifier. The max., molar stationary phase concn. of MeOH exceeded that of 1-hexanol under all exptl. conditions; however, in each case the surface area coverage by hexanol was calcd. to be larger. The capacity factors of several substituted and unsubstituted arom. hydrocarbons were detd. in 0-1% (w/v) MeOH modifier CO₂. From the linearity of capacity factor vs. modifier concn. plots, the ability of the solutes to compete with MeOH for active column sites was detd. Unsubstituted arom. hydrocarbons do not appear to compete with the modifier for direct adsorption onto modifier-sorbing active sites.

L10 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:160858 CAPLUS
DOCUMENT NUMBER: 110:160858
TITLE: Surface excess (Gibbs) adsorption isotherms of **supercritical carbon dioxide** on octadecyl-bonded silica stationary phases
AUTHOR(S): Strubinger, Joseph R.; Parcher, Jon F.
CORPORATE SOURCE: Dep. Chem., Univ. Mississippi, University, MS, 38677, USA
SOURCE: Anal. Chem. (1989), 61(9), 951-5
CODEN: ANCHAM; ISSN: 0003-2700
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The surface excess (Gibbs) adsorption isotherms of CO₂ on octadecyl-bonded silica were measured at 30, 40, and 50.degree. over a wide range of pressures from 8 to 140 bar (reduced pressures 0.01-1.9 and reduced densities 0.03-1.8). The expts. covered a range from normal gas chromatog. to supercrit. fluid and liq. chromatog. with CO₂ as the mobile phase. The retention vol. of a probe solute, C₆H₆, was also measured as a function of temp., pressure, surface coverage, and mobile phase d. The

surface excess isotherms displayed max. at pressures close to the crit. pressure. These max. were caused by the pronounced change in the d. of the bulk fluid phase near the crit. pressure; i.e., the d. of the mobile phase increased with pressure to a greater extent than the d. of the adsorbed layer at the adsorbent surface. At the subcrit. temp., a discontinuity in the excess amt. adsorbed was obsd. at the pressure corresponding to the vapor pressure of liq. CO₂. The measured void vol. of the column was const. over the range of exptl. temps. and pressures. This indicates that the inert gas probes used for the detn. of the dead-time of the column penetrated the adsorbed layer(s) of CO₂ and that the exptl. measured quantity was the excess amt. of CO₂ adsorbed, not the abs. or total amt. Because the d. of the mobile phase could be detd. from the measured molar flow rate and known void vol., no assumed equation of state was required for the supercrit. fluid. Under the conditions commonly used for supercrit. fluid chromatog. with CO₂, with solid adsorbent is covered with a layer of adsorbed CO₂ 1-3 mol. diams. in thickness. The amt. of adsorbed CO₂ decreases with pressure at fixed temp. and increases with temp. at fixed pressure. The d. isotherms, however, show normal temp. dependence; i.e., the amt. adsorbed decreases with temp.

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NEWS 26 Sep 16 CA Section Thesaurus available in CAPLUS and CA
NEWS 27 Oct 01 CASREACT Enriched with Reactions from 1907 to 1985

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=> s supercritical carbon dioxide
16526 SUPERCRITICAL
924964 CARBON
360375 DIOXIDE
L1 2620 SUPERCRITICAL CARBON DIOXIDE
(SUPERCRITICAL(W) CARBON(W) DIOXIDE)

=> l1 and isolation
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211836 ISOLATION
L2 27 L1 AND ISOLATION

=> s l1 and separation
158454 SEPARATION
L3 73 L1 AND SEPARATION

=> dup rem l2 and l3
'L3' IS NOT VALID HERE

=> dup rem l2 and l3
'L3' IS NOT VALID HERE

=>

=> dup rem l2 l3
PROCESSING COMPLETED FOR L2
PROCESSING COMPLETED FOR L3
L4 100 DUP REM L2 L3 (0 DUPLICATES REMOVED)

=> s l3 and vitamin D
149509 VITAMIN
1917772 D
20178 VITAMIN D
(VITAMIN(W) D)
L5 0 L3 AND VITAMIN D

=> s l2 and vitamin D
149509 VITAMIN
1917772 D
20178 VITAMIN D
(VITAMIN(W) D)
L6 0 L2 AND VITAMIN D

=> s l2 and vitamin D3
149509 VITAMIN
30699 D3
8670 VITAMIN D3
(VITAMIN(W) D3)
L7 0 L2 AND VITAMIN D3

=> s l2 and vitamin D2
149509 VITAMIN
48840 D2
2388 VITAMIN D2
(VITAMIN(W) D2)
L8 0 L2 AND VITAMIN D2

=> d l2 1-27 ibib hitstr abs

L2 ANSWER 1 OF 27 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:19791 CAPLUS
DOCUMENT NUMBER: 137:159100
TITLE: Pharmaceutical applications of **supercritical carbon dioxide**
AUTHOR(S): Kaiser, C. S.; Rompp, H.; Schmidt, P. C.
CORPORATE SOURCE: Department of Pharmaceutical Technology,
Eberhard-Karls-University, Tübingen, Germany
SOURCE: Pharmazie (2001), 56(12), 907-926
CODEN: PHARAT; ISSN: 0031-7144
PUBLISHER: Govi-Verlag Pharmazeutischer Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. The appearance of a supercrit. state was already obsd. at the beginning of the 19th century. Nevertheless, the industrial extn. of plant and other natural materials started about twenty years ago with the decaffeination of coffee. Today carbon dioxide is the most common gas for supercrit. fluid extn. in food and pharmaceutical industry. Since pure supercrit. carbon dioxide is a lipophilic solvent, mixts. with org. solvents, esp. alcs., are used to increase the polarity of the extn. fluid: more polar compds. can be extd. in this way. The main fields of interest are the extn. of vegetable oils from plant material in anal. and preparative scale, the prepn. of essential oils for food and cosmetic industry and the **isolation** of substances of pharmaceutical relevance. Progress in research was made by the precise measurement of phase equil. data by means of different methods. Apart from extn.

supercrit. fluid chromatog. was introduced in the field of analytics. as well as micro- and nanoparticle formation using supercrit. fluids as solvent or antisolvent. This review presents pharmaceutical relevant literature of the last twenty years with special emphasis on extn. of natural materials.

REFERENCE COUNT: 367 THERE ARE 367 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

4

L2 ANSWER 2 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:762296 CAPLUS

DOCUMENT NUMBER: 134:155098

TITLE: Preparation of noble metal fine particles in water/
supercritical carbon dioxide
microemulsion

AUTHOR(S): Yonezawa, Yoshiro; Kometani, Noritsugu

CORPORATE SOURCE: Fac. Eng., Osaka City Univ., Japan

SOURCE: Chorinkai Saishin Gijutsu (2000), 4, 45-51

CODEN: CSGIF5

PUBLISHER: Jasuko Repotosha

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A review, with 37 refs., on the subject matter. Described herein are (1) synthesis of fine particles of silver and gold, and their optical properties, by referring to the results of researches on e.g., **isolation** of matrixes from metallic clusters and radiolysis of aq. solns. of metallic ions, and (2) new methods of fine metallic particles in water/supercrit. CO₂ microemulsion, form in the presence of ammonium carboxylate perfluoroether as the surfactant and used as the microreactor, where AgClO₄ and NaAuCl₄ are used as the stock materials.

L2 ANSWER 3 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:542839 CAPLUS

DOCUMENT NUMBER: 133:117174

TITLE: Processing method of extracting effective components from gettama leaf using **supercritical carbon dioxide**

INVENTOR(S): Zhou, Guixin

PATENT ASSIGNEE(S): Gute Gettama Development Co., Ltd., Zunyi, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1241560	A	20000119	CN 1999-114969	19990625

AB The process comprises crushing leaf of Eucommia Oliv., extg. with CO₂ at 35-40.degree. and 15-25 MPa for 2 h to obtain chlorogenic acid, extg. at 45-50.degree. and 25-35 MPa for 2 h to obtain geniposidic acid, and extg. at 55-65.degree. and 40-50 MPa for 2.5 h to obtain caryophyllin diglycoside.

L2 ANSWER 4 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:651943 CAPLUS

DOCUMENT NUMBER: 132:37741

TITLE: High temperature **supercritical carbon dioxide** extractions of geological samples: effects and contributions from the sample matrix

AUTHOR(S): Jaffe, R.; Diaz, D.; Furton, K. G.; Lafargue, E.
 CORPORATE SOURCE: Southeast Environmental Research Program, Florida
 International University, Miami, FL, 33199, USA
 SOURCE: Applied Geochemistry (1999), Volume Date 2000, 15(1),
 79-89
 CODEN: APPGEY; ISSN: 0883-2927
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Stepwise high-temp. supercrit. fluid extn. (HT-SFE) has been suggested as
 a tool to study the speciation of hydrocarbons in geol. samples.
 Hydrocarbons extd. at lower temps. (e.g., 50.degree.) are presumed to be
 part of the freely extractable fraction, whereas those recovered at the
 high temps. (e.g., 300 and 350.degree.) are those "trapped" within the
 macromol. org. matrix and are therefore, resistant to desorption. The
 latter are released from the matrix after this undergoes thermally induced
 structural rearrangements. However, the question still remains if and to
 what extend, pyrolysis of the org. matrix can contribute to this fraction.
 Based on the characteristics of the sample matrix of two different
 Posidonia and Kupferschiefer shale samples subject to HT-SFE, the
 pyrolytic contributions at elevated extn. temps. are only minor under the
 exptl. conditions used, and the thermally induced structural changes in
 the macromol. org. matrix are only partially irreversible.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:600147 CAPLUS
 DOCUMENT NUMBER: 131:292394
 TITLE: The effect of **supercritical carbon**
dioxide treatment on the leachability and
 structure of cemented radioactive waste-forms
 AUTHOR(S): Hartmann, T.; Paviet-Hartmann, P.; Rubin, J. B.;
 Fitzsimmons, M. R.; Sickafus, K. E.
 CORPORATE SOURCE: Materials Science and Technology Division, Los Alamos
 National Laboratory, Structure Property Relations, Los
 Alamos, NM, 87545, USA
 SOURCE: Waste Management (Oxford) (1999), 19(5), 355-361
 CODEN: WAMAE2; ISSN: 0956-053X
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The former process for the cementation of transuranic (TRU) low-level
 wastes poses several tech. problems. Specifically in the US a TRU
 waste-form has not yet passed the Waste **Isolation** Pilot Plant
 prohibition for free liq. For this reason, treatment of the portland
 cement based waste-form with supercrit. CO₂ (SCCO₂) is shown to satisfy
 regulations. The effect of SCCO₂ treatment by applying different CO₂
 pressure and temp. conditions (8.4 MPa < p < 28 MPa, 35.degree. < T <
 62.degree.) on the leachability, phase constitution, and microstructure of
 surrogate-doped portland cement type I/II samples is presented. Leaching
 studies were performed using a synthetic groundwater leaching procedure.
 Changes in phase constitution of the major cryst. phases (Ca(OH)₂, CaCO₃)
 as well as the microstructure were measured by x-ray diffraction and SEM.
 SCCO₂ treatment at 8.4 MPa and 35.degree. can be shown as the most
 promising conditions to satisfy the requirements of the Department of
 Transportation (DOT) and to enhance the natural aging reaction of cement
 paste by carbonation, combined with the lowest release rates of the
 surrogates ²³²Th, and ¹⁵¹/153Eu.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:388693 CAPLUS
DOCUMENT NUMBER: 131:29476
TITLE: Recovery of bioactive sesquiterpene lactone from
Tanacetum parthenium by extraction with
supercritical carbon dioxide
AUTHOR(S): Kery, A.; Ronyai, E.; Simandi, B.; Lemberkovics, E.;
Keve, T.; Deak, A.; Kemeny, S.
CORPORATE SOURCE: Inst. Pharmacognosy, Semmelweis Univ. Medicine,
Budapest, H-1085, Hung.
SOURCE: Chromatographia (1999), 49(9/10), 503-508
CODEN: CHRGB7; ISSN: 0009-5893
PUBLISHER: Friedrich Vieweg & Sohn Verlagsgesellschaft mbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **isolation** of parthenolide-rich products from feverfew
(Tanacetum parthenium (L.) Sch.) with super-crit. carbon dioxide extn. has
been investigated. A 32 full-factorial design was used to map the effects
of pressure and temp. on the extn. yields and on the yield of
parthenolide. The compn. of the essential oil of feverfew obtained by
hydrodistn. was compared with that of the SFE ext. contg. the volatile
compds.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:223127 CAPLUS
DOCUMENT NUMBER: 131:86950
TITLE: Application of **supercritical carbon
dioxide** to the extraction of spice flavors
AUTHOR(S): Shiraishi, Satoru
CORPORATE SOURCE: Technology Research Center, Hasegawa Fragrance Co.,
Ltd., Japan
SOURCE: Koryo (1999), 201, 113-120
CODEN: KORYAR; ISSN: 0368-6558
PUBLISHER: Nippon Koryo Kyokai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB Supercrit. CO2 as a solvent is particularly useful for extn. of essential
oils from plant materials, compared to conventional methods such as steam
distn. and org. solvent extn. This review with 17 refs. refers to the
characteristics and principle of supercrit. CO2 extn. and its application
to the **isolation** of spice essential oils.

L2 ANSWER 8 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:598402 CAPLUS
DOCUMENT NUMBER: 125:226269
TITLE: Use of **supercritical carbon
dioxide** in coal processing
AUTHOR(S): Lanterman, H. Bryan; Lee, Sunggyu
CORPORATE SOURCE: Process Research Center, University Akron, Akron, OH,
44325-3906, USA
SOURCE: Proceedings - Annual International Pittsburgh Coal
Conference (1995), 12th, 738-743
CODEN: PICNE4; ISSN: 1075-7961
PUBLISHER: Pittsburgh Coal Conference, University of Pittsburgh
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Coal desulfurization for precombustion combustion was examd. using
supercrit. CO2-water and supercrit. CO2-MeOH at const. reduced temp. and
reduced pressure. Extn. efficiencies as well as the Btu heating values,
proximate and ultimate anal. of the extd. coal were provided. Although
supercrit. water was the best solvent in terms of sulfur extn., this
solvent alone resulted in reduced recovered heating value. Use of CO2,

however, either in conjunction with water or MeOH or alone, did not show any beneficial solvent effects; however, supercrit. CO2 has use as a secondary cleaning agent. Some typical org. sulfur compds. were identified in the liq. ext.

L2 ANSWER 9 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:495415 CAPLUS

DOCUMENT NUMBER: 125:140825

TITLE: A study on the extraction of cinnamon oil with **supercritical carbon dioxide**

AUTHOR(S): Chen, Kaixun; Yao, Ruiqing; Yang, Jichu; Zhu, Xu'en

CORPORATE SOURCE: Department of Chemical Engineering, Northwest University, Xi'an, 710069, Peop. Rep. China

SOURCE: Xibei Daxue Xuebao, Ziran Kexueban (1996), 26(2), 137-140

CODEN: HPHPAQ; ISSN: 1000-274X

PUBLISHER: Xibei Daxue Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A technol. for **isolation** of cinnamon oil with carbon dioxide as a solvent is described. The principle of the technique using supercrit. CO2 fluid as a solvent is to change the soly. of the solute in liq. CO2 at the crit. point of CO2. The exptl. result shows that in case of careful selection of proper conditions, the content of cinnamic aldehyde in cinnamon oil is more than 80%.

L2 ANSWER 10 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:389806 CAPLUS

DOCUMENT NUMBER: 125:53655

TITLE: A comparison between the oil and **supercritical carbon dioxide** extract of Hungarian wild thyme (Thymus serpyllum L.)

AUTHOR(S): Oszagyan, M.; Simandi, B.; Sawinsky, J.; Kery, A.

CORPORATE SOURCE: Department of Chemical Engineering, Technical University of Budapest, Budapest, H-1521, Hung.

SOURCE: Journal of Essential Oil Research (1996), 8(3), 333-335

CODEN: JEOREG; ISSN: 1041-2905

PUBLISHER: Allured

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two samples of wild thyme (T. serpyllum), which were collected from different locations in Hungary, were subjected to CO2 extn. and oil **isolation** by hydrodistn. Using GC and GC/MS as the method of anal. their compns. were compared. Anal. revealed that the oils and exts. contained the same components although they differed quant. The concn. of p-cymene, borneol, nerol and carvacrol was higher in the distd. oil than in the volatile conc. obtained by SFE.

L2 ANSWER 11 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:219681 CAPLUS

TITLE: Extraction and gas chromatographic yield analysis of squalene and stigmasterol from lemnae seu spirodelae herba using **supercritical carbon dioxide**.

AUTHOR(S): Choi, Young Hae; Kim, Jinwoong; Noh, Min Jeong; Park, Eun Mi; Choi, Eun Sun; Yoo, Ki-Pung

CORPORATE SOURCE: College Pharmacy, Seoul National University, Seoul, S. Korea

SOURCE: Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March 24-28 (1996), I&EC-164. American Chemical Society: Washington, D. C.

CODEN: 62PIAJ

DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB Utilizing two different types of equil. cell, column and gas chromatogs., the existence of viable amts. of phytochem. substances are newly identified from Lemnae Spirodela herba by supercrit. CO2 extn. We also carried out Soxhlet extn. by liq. solvents. Esp., we could isolate significant amts. of squalene and stigmasterol by supercrit. extn. compared to the conventional Soxhlet liq. extn. Over a wide range of supercrit. equil. conditions (308.15-333.15 K and 10-30 MPa), the selectivities and yields of **isolation** are detd. for both squalene and stigmasterol. We also discuss the advantage and shortcomings of supercrit. CO2 and liq. solvents in extg. phytochems. from natural plants with emphasis on yield and selectivity.

L2 ANSWER 12 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:639268 CAPLUS
DOCUMENT NUMBER: 123:142237
TITLE: Pilot-laboratory scale **supercritical carbon dioxide** extraction used for the **isolation** of seed oils

AUTHOR(S): Cocero, Maria Jose; Calvo, Lourdes
CORPORATE SOURCE: Dep. Ing. Quim., Univ. Valladolid, Spain
SOURCE: Alimentacion, Equipos y Tecnologia (1995), 14(3), 67-72
CODEN: AEQTDY; ISSN: 0212-1689
PUBLISHER: Editorial Alcion, S.A.
DOCUMENT TYPE: Journal
LANGUAGE: Spanish

AB An overview is given of the use of supercrit. fluid extn. with CO2 in the food industry and related areas. The complexity and cost restricts its utilization to operations where the added value of the product justifies the extra expense or where there is no other alternative method available. The construction of a pilot/lab.-scale facility for supercrit. fluid extn. is discussed and representative results from sunflower oil extn. are shown.

L2 ANSWER 13 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:297955 CAPLUS
DOCUMENT NUMBER: 122:64083
TITLE: Extraction of Bioactive Sesquiterpene Lactones from Magnolia grandiflora Using **Supercritical Carbon Dioxide** and Near-Critical Propane

AUTHOR(S): Castaneda-Acosta, Jose; Cain, Andrew W.; Fischer, Nikolaus H.; Knopf, F. Carl
CORPORATE SOURCE: Department of Chemistry, Louisiana State University, Baton Rouge, LA, 70803, USA
SOURCE: Journal of Agricultural and Food Chemistry (1995), 43(1), 63-8
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The bioactive sesquiterpene lactones parthenolide and costunolide, as well as the tricyclic sesquiterpene cyclocolorenone, were extd. from the leaves of M. grandiflora. Parthenolide, costunolide, and cyclocolorenone in the exts. were identified by 1H NMR and quantified by HPLC. Results indicate that supercrit. carbon dioxide selectively removed parthenolide, costunolide, and cyclocolorenone when compared to std. liq. dichloromethane or near-crit. propane extn. HPLC traces show that the carbon dioxide ext. is virtually clean of any chlorophyll or fatty material peaks which hinder **isolation** of these chems.

L2 ANSWER 14 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:551134 CAPLUS

DOCUMENT NUMBER: 121:151134

TITLE: **Isolation** of natural insecticidal compounds from essential oils by using sub- and **supercritical carbon dioxide**

AUTHOR(S): Naik, S.N.; Kumar, Ashok; Maheshwari, R.C.

CORPORATE SOURCE: Cent. Rural Dev. Technol., Indian Inst. Technol., New Delhi, 110016, India

SOURCE: Indian Perfumer (1993), 37(4), 364-72

CODEN: IPERAS; ISSN: 0019-607X

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 45 refs. .beta.-Asarone, eugenol, thymol, 1,8-cineole, coumarins, etc., are discussed and their **isolation** method by using subcrit. and supercrit. CO₂ is described.

L2 ANSWER 15 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:330785 CAPLUS

DOCUMENT NUMBER: 120:330785

TITLE: **Isolation** of peppermint oil using **supercritical carbon dioxide** extraction

AUTHOR(S): Reverchon, E.; Ambruosi, A.; Senatore, F.

CORPORATE SOURCE: Dip. Ing. Chim. Aliment., Univ. Salerno, Fisciano, I-84084, Italy

SOURCE: Flavour and Fragrance Journal (1994), 9(1), 19-23

CODEN: FFJOED; ISSN: 0882-5734

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Peppermint leaf oil was isolated by a supercrit. fluid extn. (SFE) using CO₂ in which the extn. was followed by a 2-stage fractional sepn. Chem. anal. revealed that oils extd. under different SFE conditions possessed a widely different percentage compn. The percentage of co-extd. cuticular waxes varied too. Oil obtained by steam distn. was also compared with the extd. oils. Although practically the same compds. were present in the steam distd. oil, its compn. was similar to SFE oil extd. under non-optimized conditions. Qual. aroma tests showed that the oil obtained at optimum SFE conditions had a fragrance that better resembled that of the peppermint leaves used for the extn. of the oils.

L2 ANSWER 16 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:3760 CAPLUS

DOCUMENT NUMBER: 120:3760

TITLE: Selective extraction of phenolic components from Ginkgo biloba extracts using **supercritical carbon dioxide** and off-line capillary gas chromatography/mass spectrometry

AUTHOR(S): Verotta, Luisella; Peterlongo, Federico

CORPORATE SOURCE: Dip. Chim. Org. Ind., Milan, 20133, Italy

SOURCE: Phytochemical Analysis (1993), 4(4), 178-82

CODEN: PHANEL; ISSN: 0958-0344

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method has been developed for the extn. and anal. of phenolic components from crude exts. of G. biloba by supercrit. fluid extn. with carbon dioxide combined with off-line capillary gas chromatog./mass spectrometry. Class-selective extn. has been performed with a single supercrit. fluid by varying the extn. conditions. This method is applicable to the scale-up, **isolation** and identification of toxic phenolic components in com. exts. of G. biloba.

L2 ANSWER 17 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:648428 CAPLUS
DOCUMENT NUMBER: 119:248428
TITLE: **Isolation** and identification of volatiles
and condensable material in raw beef with
supercritical carbon dioxide
extraction
AUTHOR(S): King, Mei Fong; Hamilton, Barry L.; Matthews, Michael
A.; Rule, Daniel C.; Field, Ray A.
CORPORATE SOURCE: Dep. Chem. Eng., Univ. Wyoming, Laramie, WY, 82071,
USA
SOURCE: Journal of Agricultural and Food Chemistry (1993),
41(11), 1974-81
CODEN: JAFCAU; ISSN: 0021-8561
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Supercrit. CO2 extn. of raw beef produced two kinds of samples: a
noncondensable volatile fraction that was concd. from the CO2 on an
adsorbent (Tenax TA) and a condensed lipid fraction. The lipid fraction
was heated subsequent to CO2 extn. to produce addnl. volatiles. The
noncondensable fraction produced beef-like aroma. The compds. in this
fraction were desorbed from the Tenax directly into a GC/FID or GC/mass
spectrometer. Lipid fractions were analyzed by direct headspace sampling,
also using GC and GC/mass spectrometry. Eighty-six compds. were
identified in noncondensable fractions and 59 compds. in lipid headspace
samples. Twenty-six compds. were common to both fractions.

L2 ANSWER 18 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:87361 CAPLUS
DOCUMENT NUMBER: 118:87361
TITLE: **Isolation** of rosemary oil: comparison
between hydrodistillation and **supercritical**
carbon dioxide extraction
AUTHOR(S): Reverchon, E.; Senatore, F.
CORPORATE SOURCE: Dip. Ing. Chim. Aliment., Univ. Salerno, Fisciano,
I-84081, Italy
SOURCE: Flavour and Fragrance Journal (1992), 7(4), 227-30
CODEN: FFJOED; ISSN: 0882-5734
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rosemary leaf oil was isolated by a supercrit. fluid extn. (SFE) procedure
coupled to a fractional sepn. following the extn. stage. The oil produced
was compared with rosemary oil isolated by hydrodistn. Chem. anal.
revealed that, although roughly the same compds. were extd., the two oils
possessed a widely different percentage compn. Qual. aroma testing showed
that the oil obtained by SFE using CO2 showed a fragrance that better
resembled that of the rosemary leaves used for the **isolation** of
the oil.

L2 ANSWER 19 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:45732 CAPLUS
DOCUMENT NUMBER: 118:45732
TITLE: Extraction of magnolol from plants with
supercritical carbon dioxide
INVENTOR(S): Tada, Masayuki
PATENT ASSIGNEE(S): Jumoku Chushatsu Seibun Riyo Gijutsu Kenkyu Kumiai,
Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 04264035	A2	19920918	JP 1991-150805	19910215
AB	Magnolol (I), useful as a central nervous system depressant, anticaries agent, and food preservative, is extd. from I-contg. plants (e.g. Magnolia) by dissolving I in supercrit. CO2 and isolation of I from CO2 by varying the pressure and/or temp. of the CO2. I was extd. from plants with 80-90% recovery.				

L2 ANSWER 20 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:150460 CAPLUS

DOCUMENT NUMBER: 116:150460

TITLE: Liquid or **supercritical carbon dioxide** for preparation of odorless Porphyra

INVENTOR(S): Oosumi, Yukihiro; Yoshida, Reiko; Imamura, Hitoshi

PATENT ASSIGNEE(S): Shiroko K. K., Japan; Nippon Sanso K. K.

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 03285658	A2	19911216	JP 1990-84424	19900330
AB	The odorless Porphyra(Nori) is prepd. by the treatment of laver with liq. or supercrit. CO2. The odorless laver retains most of the color and taste of the Porphyra and is useful for isolation of physiol. active substances such as taurine and .gamma.-amino-butyric acid.				

L2 ANSWER 21 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:150259 CAPLUS

DOCUMENT NUMBER: 116:150259

TITLE: **Supercritical carbon dioxide** extraction of 2,4-dichlorophenol from food crop tissues

AUTHOR(S): Thomson, Cynthia A.; Chesney, David J.

CORPORATE SOURCE: Dep. Chem., Michigan Technol. Univ., Houghton, MI, 49931, USA

SOURCE: Analytical Chemistry (1992), 64(8), 848-53
CODEN: ANCHAM; ISSN: 0003-2700

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Supercrit. fluid extn. with CO2 was effective for the **isolation** of residue levels (0.1-1 ppm) of 2,4-dichlorophenol (I) from selected plant tissues. The I residues were incompletely extd. with supercrit. CO2 alone, since a substantial fraction of the I was covalently attached to the plant matrix. An acid pretreatment procedure was developed to partially hydrolyze the plant tissue prior to extn., releasing the bound residues. Steam distn. gave higher residue levels for field-treated straw samples. This is attributed to the greater degree of hydrolysis inherent in the steam distn. procedure. Supercrit. CO2 extn. of field-treated seed samples gave higher levels of I residues than did steam distn. The supercrit. fluid extractant was able to solvate I residues in the interior of the seed and transport them to the surface for collection. The aq. medium used in steam distn. was unable to penetrate the hydrophobic seed matrix to the same degree. Although the actual extn. time for supercrit. fluid extn. was far less than that of steam distn. (45 min vs. 5 h), the total sample prepn. time was similar in both methods. I was detd. by HPLC with amperometric detection.

L2 ANSWER 22 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:520600 CAPLUS
 DOCUMENT NUMBER: 113:120600
 TITLE: Extraction of the volatile oil of chamomile
 flowerheads using **supercritical
carbon dioxide**
 AUTHOR(S): Vuorela, H.; Holm, Y.; Hiltunen, R.; Harvala, T.;
 Laitinen, A.
 CORPORATE SOURCE: Sch. Pharm., Univ. Helsinki, Helsinki, SF-00170,
 Finland
 SOURCE: Flavour and Fragrance Journal (1990), 5(2), 81-4
 CODEN: FFJOED; ISSN: 0882-5734
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The possibilities of enriching the most volatile chamomile (Chamomilla
 recutita) compds. in exts. by supercrit. CO2 extn. were studied by
 headspace gas chromatog. combined with mass spectrometry. Extn. with
 supercrit. CO2 is a convenient method for isolating volatile oils. Also
 the most volatile components of essential oils, that are normally lost
 during **isolation**, can be enriched in an ext. obtained by
 supercrit. CO2 extn.

L2 ANSWER 23 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:180739 CAPLUS
 DOCUMENT NUMBER: 112:180739
 TITLE: Purification and **isolation** of
 polyol-polyurethanes by extraction with
supercritical carbon dioxide
 INVENTOR(S): Robin, Jean; Blind, Andre
 PATENT ASSIGNEE(S): Rhone-Poulenc Chimie, Fr.
 SOURCE: Fr. Demande, 11 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2629086	A1	19890929	FR 1988-4051	19880322
FR 2629086	B1	19901207		
EP 337898	A1	19891018	EP 1989-420097	19890317
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 02004757	A2	19900109	JP 1989-66485	19890320
US 4871460	A	19891003	US 1989-327033	19890322
PRIORITY APPLN. INFO.:			FR 1988-4051	19880322

AB Method for purifn. and sepn. of condensates of isocyanates having free NCO
 groups (obtained from aliph., cycloaliph., or arylaliph. di- or
 polyisocyanates whose NCO groups are not attached to the arom. rings)
 comprises treating the condensates with a liq. or supercrit. inert gas.
 The condensates are useful for foams, elastomers, adhesives, coatings, or
 varnishes. Thus, a prepolymer contg. 3.5% free HDI, obtained by the
 reaction of OH-terminated poly(ethylene adipate) with HMI, was extd. with
 CO2 at 80.degree. and 14 MPa for 2 h to give a purified prepolymer with
 0.05% HDI.

L2 ANSWER 24 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:32968 CAPLUS
 DOCUMENT NUMBER: 112:32968
 TITLE: Extraction of eicosapentaenoic acid and
 tocosahexaenoic acid from fish oil with
supercritical carbon dioxide
 INVENTOR(S): Kubota, Masayoshi; Matsuzaki, Harumi; Takahashi,
 Sankichi

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan; Hitachi Cable, Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	JP 01169354	A2	19890704	JP 1987-327027	19871225
AB	During extn. of fish oil (esters) with supercrit. CO2 and subsequent gas chromatog. for the sepn. of eicosapentaenoic acid and docosahexaenoic acid, the chromatographed fractions are sepd. with separatory tanks contg. antioxidants (i.e. vitamin E) and distributed into containers filled with inert gases (e.g. CO2). The sepd. fractions are stable.				

L2 ANSWER 25 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:607527 CAPLUS

DOCUMENT NUMBER: 109:207527

TITLE: **Isolation** of spices, peroxidase and other useful components from cruciferous plants with **supercritical carbon dioxide**

INVENTOR(S): Kobayashi, Takeshi; Taniguchi, Masayuki

PATENT ASSIGNEE(S): Kinjirushi Wasabi K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	JP 63087977	A2	19880419	JP 1986-233751	19861001
	JP 2534043	B2	19960911		
AB	Isolation of spices (I), peroxidase (II), etc., from cruciferous plants by extn. with supercrit. or liq. CO2 is described. Horseradish (100 kg, water content, 70%) was homogenated, extd. with supercrit. CO2 at 40.degree. and 200 atm. and the pressure was reduced to release CO2 to obtain 0.3 kg allyl isocyanate. The residue was mixed with H2O, treated with EtOH-CHCl3 (2:1) for pptn., and the supernatant was treated with 250 g (NH4)2SO4/L for pptn. The ppt. was dissolved, treated with EtOH, subjected to 56-70% satd. (NH4)2SO4 fractionation, and crystd. to give preoxidase.				

L2 ANSWER 26 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:169565 CAPLUS

DOCUMENT NUMBER: 108:169565

TITLE: **A supercritical carbon dioxide** extraction from mixtures of triglycerides and higher fatty acid methyl esters using a gas-effusion-type system

AUTHOR(S): Ikushima, Yutaka; Hatakeda, Kiyotaka; Ito, Shota;

Saito, Norio; Asano, Takashi; Goto, Tomio

CORPORATE SOURCE: Gov. Ind. Res. Inst., Sendai, 983, Japan

SOURCE: Ind. Eng. Chem. Res. (1988), 27(5), 818-23

CODEN: IECRED; ISSN: 0888-5885

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Supercrit. CO2 extn. was performed to selectively sep. and conc. specific components in high purity and a large soly. from mixts. of triglycerides and higher fatty acid Me esters by using a gas-effusion-type app. The

addn. of EtOAc as an entrainer to the CO₂ produced a supercrit. fluid that had high efficiencies for both the extn. of triolein (I) and the sepn. of I from its mixts. with tristearin. The use of the sepn. chamber, which was packed with stainless steel Rasching rings, made possible the selective extn. of Me oleate (II) from a mixt. of Me stearate (III), II, Me linoleate, and Me linolenate (IV). Furthermore, the **isolation** of III and IV from the mixt. became feasible by means of both a tube of AgNO₃ supported on silica gel and EtOAc.

L2 ANSWER 27 OF 27 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1984:453613 CAPLUS

DOCUMENT NUMBER: 101:53613

TITLE: Extraction of seed oils with **supercritical carbon dioxide**: effect on residual proteins

AUTHOR(S): Stahl, Egon; Quirin, Karl W.; Blagrove, Robert J.

CORPORATE SOURCE: Dep. Pharmacog. Anal. Phytochem., Univ. Saarland, Saarbruecken, D-6600, Fed. Rep. Ger.

SOURCE: J. Agric. Food Chem. (1984), 32(4), 938-40

CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Vegetable oils can be extd. from seed meals with supercrit. CO₂ at relatively low temps. without the need to remove traces of solvent by heating. Despite the inert nature of CO₂, its possible interaction with the proteins of the residual meal must be investigated. The **isolation** and characterization by gel electrophoresis of proteins from various seed meals of com. interest exposed to supercrit. CO₂ are described. No significant difference, compared with meals extd. with hexane, was obsd. by amino acid anal. The major protein subunits were not cross-linked, whereas the degrdn. by trypsin of extd. lupine seed globulins was not enhanced by treatment with CO₂, indicating minimal denaturation.